

INTEGRATED MICROMACHINED FILTER SYSTEMS AND METHODS

Abstract of the Disclosure

A micromachined filter system comprises a micromachined filter integrated in a micro-device. In various embodiments, the micromachined filter system is fabricated along with the micro-device using the same or similar techniques. The micromachined filter may comprise a polysilicon filter. According to the micromachined filter system, the micromachined filter may be formed in one or more polysilicon layers of the micro-device. The micromachined filter may also comprise a polyimide filter. In various embodiments, the micromachined filter may be situated downstream of a fluid inlet of the micro-device. In various embodiments, a non-integrated, external pre-filter may be used in conjunction with an integrated micromachined filter.

Figures

Figure 1: A schematic diagram of the experimental setup. The diagram shows a cross-section of a system with a central region labeled 'Sample' and two outer regions labeled 'Electrode' and 'Insulator'. The 'Sample' region is connected to a 'Voltage Source' and a 'Current Source'. The 'Electrode' and 'Insulator' regions are also connected to the 'Voltage Source' and 'Current Source'. The diagram illustrates the electrical circuit and the physical components of the system.